***COMPLETE IN NOTEBOOK! COPY ALL FIGURES!***

CW21: Rotations in the Coordinate Plane

**Geometry**

|  |  |  |
| --- | --- | --- |
| **Objective** You will be able to rotate an object 90 degrees clockwise and counterclockwise, and 180 degrees about the origin. | | |
| **Directions**: Create a graph to make your predictions below. Correctly label the graphs so the information is clear. | | |
| 1. The triangle YUM is plotted in the coordinate plane: Y, U, and M. The triangle is rotated clockwise 90 degrees about the origin.  (a) Predict which quadrant U’ will end up in.  (b) Explain how you determined your answer. | | 2. The ACT is plotted in the coordinate plane: , , and . The triangle is rotated counter-clockwise 90 degrees about the origin.  (a) Predict which quadrant point A’ will end up in. |
| 3. Rectangle , , , and . The rectangle is rotated 90 degrees clockwise about the origin.  (a) What quadrant will Point E’ will end up in? Show work. | | 4. Rectangle , , , and . The rectangle is rotated 90 degrees clockwise about the origin.  (a) What quadrant will Point R’ end up in? Show work. |
| 5.. Quadrilateral , , , and is rotated 90 degrees counter-clockwise about the origin.  (a) What quadrant will Point O’ end up in? Show work. | | 6. Quadrilateral , , , and is rotated 90 degrees counter-clockwise about the origin.  (a) What quadrant will Point M’ end up in? Show work. |
| **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.08.51 PM.png** | | 7. Using the image to the left  (a) If the arrow were rotated 90 degrees clockwise about the origin, what direction would it point? Explain.  (b) If the arrow were rotated 90 degrees counter-clockwise about the origin, what direction could it point? Explain. |
| STOP & JOT: Why is estimating an important tool? | | |
| Explain the rotation that took place in each picture: [Include direction] | | |
| 8.  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.28.30 PM.png** | | 9.  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.27.52 PM.png** |
| 10.  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.28.17 PM.png** | | 11.  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.28.07 PM.png** |
| 12. Notice & Wonder  **Macintosh HD:Users:rmitrovich:Desktop:Screen Shot 2016-05-16 at 10.26.47 PM.png** | | |
| 13. Predict:  What would the pattern be if the shape were rotated clockwise 90?  Does the image below support your answer? Why or why not?  41 | | |
| Directions: Complete the transformations specified below. Create a graph and label the coordinates of the pre-image and the image for each problem below. | | |
| 14. U(-1,4); Rotation 90° counterclockwise about the origin | 15. H(0,-1); Rotation 90° clockwise about the origin | |
| 16. I(-1,-3); Rotation 90° counterclockwise about the origin | 17. W(3,1); Rotation 90° clockwise about the origin | |
| 18. C(-1,-3); Rotation 180° about the origin a) What is different about this problem?  b) Attempt the problem. Does your solution remind you of another type of transformation? | 19. Z(5,-1); Rotation 90° clockwise about the origin | |
| 20. P(-4,4); Rotation 180° About the origin | 21. C(2,-3); Rotation 180° about the origin | |

**Exit Ticket: DO NOT COMPLETE UNTIL INSTRUCTED TO DO SO BY TEACHER.**Directions: Complete the problems below on a half sheet of paper. Write your full name and period.

|  |  |
| --- | --- |
| 1. Rectangle , , , and . The rectangle is rotated 90 degrees clockwise about the origin.  (a) What quadrant will Point R’ be located? Show work. | 2. G(-4,3); Rotated 90 degrees counterclockwise about the origin. Correctly label the pre-image and image. |